

Humankind vs. the Coronavirus – Update 4.1.2020



We published an article twenty-one days ago on the SARS-CoV-2 virus and the disease it causes, COVID-19. The past few weeks have been truly life changing in some unexpected ways. We've all learned a lot recently and there's even more we still don't know.

As a result, our lives are different now. People are getting laid off, some businesses

are closing, our neighbors and fellow citizens have started showing their true colors (most good and some bad), and governments have restricted the liberties of humankind in societies the world over, all to contain the spread of this highly contagious, potentially deadly super-virus, this silent killer - a modern day plague which appears to be far more determined to spread than American society is to stop it.

The Numbers

Twenty-one days ago, we reported the numbers as of 8:45 a.m. Here's a look back at those numbers compared to today's numbers at 8:00 a.m.

	3/11/2020	4/1/2020
Cases Worldwide:	121,246	902,563 (7.44 X increase)
Dead:	4,378	45,301 (10.35 X increase)
Recovered:	66,908	190,638 (2.85 X increase)
Currently Infected:	49,960	666,624 (13.34 X increase)

At the current rate of spread, complete global contamination would occur 68 days from today on June 8th, 2020, and at this point in time, we still know very little. COVID-19 is the name of the disease caused by the virus SARS-CoV-2. The virus was given the SARS name because genetically, it's almost a mirror image of SARS (Severe Acute Respiratory Syndrome) [Outbreak

2002-2004]. It also presents some characteristics of MERS (Middle East Respiratory Syndrome related coronavirus)[Outbreak 2012].

Rather than getting descriptive about the body's specific and frightening response to COVID-19, which serves no purpose other than sensationalism and fear mongering, we'd like to take this opportunity to leverage our expertise on the immune system and the nutrients that fuel it, thereby arming the public with tangible, helpful knowledge that will assist them to hopefully stay healthy, and keep their loved ones healthy as well. Being people who (for decades now), prefer natural therapeutics to chemical pharmaceuticals, we are uniquely positioned to share information that can prove to be helpful - information that doesn't garner wide public attention because of the FDA and the vast amounts of lobbying dollars spent by pharmaceutical companies. We assure you, the members of our extended FarmersMarketWellness.com family, that the information provided below is well documented in peer reviewed, medical journal published, scientific studies that can be easily found on pubmed.gov.

How the Immune System Works

The immune system is made up of organs, cells, and proteins. The functions of the immune system are A) to fight pathogens (germs), B) to neutralize and get rid of harmful substances from our environments, and C) to fight disease causing, internal changes occurring at a cellular level like cancer. Our immune systems are made up of two separate subsystems - the innate immune system and the adaptive immune system.

The innate immune system attacks pathogens immediately, using "Natural Killer" cells and phagocytes, firing chemicals at invading germs thereby piercing their protective layer of proteins to inhibit the germs ability to replicate. The adaptive immune system catalogues the specific characteristics of the germs' unique proteins and makes antibodies targeting those characteristics. It also remembers the characteristics of invading pathogens to be able to fight more quickly after the first exposure which explains for instance, why we only get things like chicken pox one time.

An immune system response is triggered by what scientists call antigens. Antigens are usually proteins recognized by the body as foreign, and are typically found on the surfaces of bacteria, fungi, and viruses. While trying to invade, the antigens attach themselves to the receptors on immune system cells causing a slew of actions to happen internally. Right away, certain immune system cells start fighting. Other immune cells camped out in the lymph nodes, watch for unrecognized proteins, and when spotted, leave the lymph nodes to journey to the front line of the fight. The reason doctors tend to check for swollen lymph nodes is because it can indicate that our bodies are staging an immune response.

In the ever-changing world of COVID-19, there seems to be an endless flow of misinformation. We don't believe that this is happening with malicious intent, but that it's rather an unfortunate byproduct of the information age. Since we're researchers and not physicians, we'll avoid recommending what to do if you contract SARS-CoV-2 / COVID-19, and stick to our area of expertise by telling you what you should (and shouldn't) do to ensure that your immune system is functioning at its highest possible level.

Staying Healthy

We all hear it every day - constant handwashing, a good night's sleep, sanitizing frequently touched surfaces, social distancing... on and on it goes. None of us need to be told again how to do these things at this point. Government agencies, journalists, and the citizenry in general have already drilled those things into our heads and subsequently into our daily lives. If you're like us however, you want the other stuff. You want the information that goes beyond what everyone else knows because given these new circumstances we find ourselves in, the health and safety of your loved ones is your biggest concern. Here are the do's and don'ts of staying healthy.

1. **Lay off the sauce.** Drinking alcohol suppresses your immune system. Not only does alcohol consumption lessen natural killer cell activity, it increases the body's inflammatory response, and it reduces the antiviral effects of interferon 1. Interferons are signaling proteins produced in our bodies. When cells detect a virus, interferons are released to tell nearby cells to up their defenses.
2. **Get plenty of vitamin D.** According to Mercy Medical Center, 42% of Americans are deficient in vitamin D. One type of immune cells are called killer-T lymphocyte cells. Vitamin D is necessary to activate these cells and enable them to fight infections. Killer-T cells will remain dormant unless there's sufficient vitamin D in the bloodstream. Our white blood cells produce antimicrobial peptides as sort of internal "antibiotics." Adequate amounts of vitamin D will also increase the activity of these compounds.
3. **Eat your veggies.** Studies show that a vegetarian diet raises the activity of natural killer cells by 233%. Plant based foods are also proven to combat inflammation. Uncontrolled inflammation creates numerous complications in our bodies when fighting viruses. Meat, in particular, red meat is proven to be pro-inflammatory. As it relates to the coronavirus which takes root as an infection of the lungs, high fiber diets are even more important. High fiber diets dampen the overactive immune response that's known to accompany viral infections of the lungs, and simultaneously activate killer-T cells. Lastly fiber turns harmful pro-inflammatory cells into anti-inflammatory healing cells.

*It's important to note that we recommend that vegetarians have their levels of vitamin B-12 and Vitamin D checked at least once annually, and supplement accordingly as both are needed for your immune system to function properly.

4. **Don't forget minerals.** Zinc is known to boost the immune system by ensuring that T-lymphocytes function properly. Less widely known is the fact that too much Zinc will impede immune system functionality and taking more than 25mg per day can do more harm than good. Selenium also boosts the immune system by helping natural killer cells to reproduce. It also raises their virus fighting activity.
5. **Shower shocking your way to health.** (Please don't do this if you have a circulatory disorder, a blood vessel disorder, or a neurological condition). For a reasonably healthy person, shower shocking has been proven to "wake up" dormant immune cells. Simply

switch the water temperature from hot to cold - 90 seconds on hot, 30 seconds on cold, and repeat for three cycles making the final hot cycle the hottest temp of the shower. This increases the number of white blood cells in circulation in the body.

6. **Ignore the cravings of your sweet tooth.** Sugar is an immune suppressor. It heightens levels of inflammation and gives fuel to a slew of chronic complications resulting from viral infections. Studies show that simple sugars like glucose, table sugar, fructose, and even honey result in a 50% drop in the ability of white blood cells to engulf and destroy bacteria. White blood cells need vitamin C to destroy viruses and bacteria. Sugar competes for space with vitamin C in your white blood cells. Those effects last in excess of 5 hours after consuming the sweets.
7. **Don't be a couch potato.** Exercise increases the efficiency of and number of natural killer cells. It's also known to improve the functioning of T-lymphocyte cells. Gentle, aerobic exercise is recommended because overdoing it will actually suppress the number of natural killer cells for several days.

While none of these seven items, or even all seven combined is a good substitute for hand washing, and social distancing in light of the current pandemic, we know that employing some or all of these tactics will give your system the best fighting chance it has at emerging this crisis unscathed. That is our hope and wish for you and your families. Be smart. Be diligent. Be safe.